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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/710,662 07/27/2004 Jui-Tsen Huang 12336-US-PA 4661

31561 7590 04/27/2007
JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE
7 FLOOR-1, NO. 100
ROOSEVELT ROAD, SECTION 2
TAIPEI, 100
TAIWAN

EXAMINER

HARRISON, MONICA D

ART UNIT	PAPER NUMBER
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2813

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS 04/27/2007 PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/710,662	HUANG, JUI-TSEN	
	Examiner	Art Unit	
	Monica D. Harrison	2813	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10-18 and 20 is/are pending in the application.
- 4a) Of the above claim(s) 9 and 19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-18 and 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. Applicant's amendment filed 2/16/07 has been entered. Examiner acknowledges claims 9 and 19 have been cancelled.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 10-18 and 20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. By applicant amending the claim to read over the prior art, the applicant's disclosure does not have a dielectric layer without any openings to relieve stress from a wafer. It is not suggested in applicant's drawings nor in the specification.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 10-15, 17 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Chakravorty (6,181,569 B1).

3. Regarding claim 10, Chakravorty discloses a stress relieving method for a wafer, comprising the steps of: providing a wafer (Figure 4, reference 301) with a dielectric layer thereon (Figure 4, reference 305), wherein the wafer is divided into a first area and a second area such that no circuits are formed within the first area, wherein there is no opening formed in the dielectric layer within the first area (Figure 4); forming a first material layer over the wafer to cover the dielectric layer (Figure 5a, reference 308); and forming a plurality of first openings in the first material layer within the first area (Figure 5a, reference 309).

4. Regarding claim 11, Chakravorty discloses wherein the first area comprises a scribe line (Figure 6, reference 303).

5. Regarding claim 12, Chakravorty discloses wherein the second area comprises a region for forming a die (Figure 6, reference 302, *IC chips*).

6. Regarding claim 13, Chakravorty discloses wherein the first area comprises a scribe line (Figure 6, reference 303).

7. Regarding claim 14, Chakravorty discloses wherein the first area and the second area are both regions for forming a die (Figure 6, 302)

8. Regarding claim 15, Chakravorty discloses wherein the first opening is not deep enough to expose the dielectric layer (Figure 4).

9. Regarding claim 17, Chakravorty discloses wherein before forming the second dielectric layer over the wafer, further comprises: forming a plurality of second openings in the dielectric layer within the second area (Figure 5a, reference 305); and depositing material into the second openings to form a plurality of second material layers (Figure 5a, reference 308).

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10. Regarding claim 18, Chakravorty discloses wherein the first material layer is fabricated from a dielectric material or a metal material (Figure 5a, reference 308; *dielectric*).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 16 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chakravorty (6,181,569 B1) in view of Chi (6,828,211 B2).

11. Chakravorty discloses all above claimed subject matter except the first opening exposes the dielectric layer (claim 16) and the first material layer is a high stress dielectric layer (claim 20).

Chi discloses first opening exposes the dielectric layer (Figure 7) and the first material layer is a high stress dielectric layer (Figure 8, reference 26).

It would have been obvious, at the time the invention was made, for one having ordinary skill in the art, to modify Chakravorty with the teachings of Chi for the purpose of using dielectrics for isolation, coupling and stress control.

Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yu et al (6,571,485 B1) in view of Chi (6,828,211 B2).

12. Regarding claim 1, Yu et al discloses a stress relieving method for a wafer, comprising the steps of: providing a wafer (Figure 2, reference 200) with a dielectric layer thereon (Figure 2, reference 205), wherein the wafer is divided into a first area and a second area

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such that at least no circuits are formed on the dielectric layer within the first area (Figure 2); forming a plurality of first openings in the dielectric layer within the first area (Figure 2, reference 207); and forming a first material layer over the wafer (Figure 2, reference 208), wherein the upper surface of the first material layer has pits at locations over the first openings (Figure 2, reference 211).

However, Yu et al does not disclose the first material layer is a high stress dielectric.

Chi discloses the first material layer is a high stress dielectric (Figure 8, reference 26).

It would have been obvious, at the time the invention was made, for one having ordinary skill in the art, to modify Yu et al with the teachings of Chi for the purpose of using a high k dielectric layer in order to thin a liner oxide layer for a better coupling effect in IC devices.

13. Regarding claim 2, Yu et al discloses wherein the first area comprises a scribe line (column 1, lines 30-35)

14. Regarding claim 3, Yu et al discloses wherein the second area comprises a region for forming a die (Figure 2, reference 202).

15. Regarding claim 4, Yu et al discloses wherein the first area comprises a scribe line (column 1, lines 30-35).

16. Regarding claim 5, Yu et al discloses wherein the first area and the second area are both regions for forming a die (Figure 2).

17. Regarding claim 6, Yu et al discloses wherein forming a plurality of second openings in the first dielectric layer within the second area (Figure 2, reference 206) at the same time and then depositing material into the second openings (Figure 2, reference 204) to form a plurality of second material layers.

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18. Regarding claim 7, Yu et al discloses wherein the first opening is not deep enough to expose a film layer underneath the dielectric layer (Figure 2, reference 207).

19. Regarding claim 8, Yu et al discloses wherein the first opening exposes a film layer underneath the dielectric layer (Figure 2, reference 206).

Response to Arguments

20. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

21. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica D. Harrison whose telephone number is 571-272-1959. The examiner can normally be reached on M-F 7:00am-3:30pm.


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead Jr. can be reached on 571-272-1702. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Monica D. Harrison
AU 2813

mdh
April 24, 2007


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